



Atty. Dkt. No. 040447-0238

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Takayuki ASAI
Title: OBJECT FILTERING METHOD
AND CLIENT DEVICE USING
THE SAME
Appl. No.: 09/975,505
Filing Date: 10/12/2001
Examiner: England, David E.
Art Unit: 2143

<p>CERTIFICATE OF MAILING I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date below.</p> <p><u>Ruthie Vallejo</u> (Printed Name)</p> <p><u>[Signature]</u> (Signature)</p> <p><u>September 14, 2005</u> (Date of Deposit)</p>
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AMENDMENT AND REPLY UNDER 37 CFR 1.116

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This communication is responsive to the Final Office Action dated June 20, 2005, concerning the above-referenced patent application.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this document.

Remarks/Arguments begin on page 6 of this document.

Please amend the application as follows:

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An object filtering method for filtering an object, the object requested by a client from a server, the client accessing the server through a proxy server, the method comprising:

~~a step of~~ monitoring a residual amount of memory capacity in the client, said residual amount of memory capacity being an amount of unused memory capacity in the client that is free to accept data received by the client;

~~a step of~~ notifying a filtering condition from the client to said proxy server in accordance with the monitoring result; and

~~a step of~~ filtering the object by said proxy server in accordance with the filtering condition thus notified.

2. (Currently Amended) The object filtering method as claimed in claim 1, wherein the filtering condition is notified from the client to said proxy server ~~at a~~ after the elapse of a predetermined time period since a previous notification.

3. (Currently Amended) The object filtering method as claimed in claim 2, wherein the predetermined time period is freely set from an external source.

4. (Currently Amended) The object filtering method as claimed in claim 1, wherein the filtering condition is ~~validated~~ valid only for a predetermined ~~term~~ time period after the proxy server is notified of the filtering condition.

5. (Original) The object filtering method as claimed in claim 1, wherein the filtering condition is represented by a filename extension of the object.

6. (Original) The object filtering method as claimed in claim 5, wherein said proxy server prohibits only a file having the filename extension notified from the client as the filtering condition from being transmitted to the client.
7. (Original) The object filtering method as claimed in claim 5, wherein said proxy server allows only a file having no filename extension notified from the client as the filtering condition to be transmitted to the client.
8. (Previously Presented) The object filtering method as claimed in claim 1, wherein the filtering condition is represented by a data length of the object.
9. (Previously Presented) The object filtering method as claimed in claim 8, wherein said proxy server prohibits a file having a data length exceeding the data length notified from the client as the filtering condition from being transmitted to the client.
10. (Original) The object filtering method as claimed in claim 1, wherein the client is a cellular phone terminal.
11. (Original) The object filtering method as claimed in claim 1, wherein said proxy server is a gateway server for WAP (Wireless Application Protocol).
12. (Currently Amended) A client device for accessing a server through a proxy server to request a desired object from the server, the client device comprising:
 - control means for controlling an access to said proxy server to acquire the object; and
 - memory means for storing the object,wherein said control means is configured to monitor a residual amount of memory capacity of said memory means, said residual amount of memory capacity being an amount of unused memory capacity of the memory means that is free to accept data received by the client device; and
 - wherein when said control means detects that ~~a memory~~ said residual amount of memory capacity of said memory means is equal to a predetermined ~~memory~~ residual amount

or less, said control means notifies to said proxy server a filtering condition of the object transmitted to the client device.

13. (Currently Amended) The client device as claimed in claim 12, wherein said control means ~~notifies the filtering condition~~ filtering conditions to said proxy server at-a ~~predetermined period~~ time periods.

14. (Currently Amended) The client device as claimed in claim 13, wherein the ~~predetermined period is~~ time periods are freely set from an external source.

15. (Original) The client device as claimed in claim 12, wherein the filtering condition is represented by a filename extension of the object.

16. (Previously Presented) The client device as claimed in claim 12, wherein the filtering condition is represented by a data length of the object.

17. (Previously Presented) The client device as claimed in claim 12, wherein said client device is a cellular phone terminal.

18. (Previously Presented) The client device as claimed in claim 12, wherein said client device is a WAP (Wireless Application Protocol) terminal.

19. (Currently Amended) A client device for accessing a server through a proxy server to request a desired object from the server, the client device comprising:

a controller for controlling an access to said proxy server to acquire the object; and

a memory unit for storing the object;

wherein said controller is configured to monitor a residual amount of memory capacity of said memory unit, said residual amount of memory capacity being an amount of unused memory capacity of the memory unit that is free to accept data received by the client device; and

wherein when said controller detects that a said residual amount of memory capacity of said memory unit is equal to a predetermined residual amount or less, said controller notifies to said proxy server a filtering condition for filtering the object.

20. (Previously Presented) The client device of claim 19,
wherein the filtering condition is represented by a data length of the object.

REMARKS

Status of Claims:

Claims 1-20 are present for examination.

Claim Rejections:

Claims 1-4, 8-10, 12-14, 16, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Huang et al. (U.S. Patent Number 6,438,576) (hereinafter Huang). Claims 5-7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang in view of Gauvin et al. (U.S. Patent Number 6,061,686) (hereinafter Gauvin). Claims 11 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang in view of Eerola (U.S. Patent Number 6,678,518). Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang in view of Ferguson (U.S. Patent Number 6,769,019).

With respect to claims 1-20, as amended, the rejections are respectfully traversed.

Independent claim 1, as amended, recites an object filtering method for filtering an object, the object requested by a client from a server, the client accessing the server through a proxy server, the method comprising:

“monitoring a residual amount of memory capacity in the client, said residual amount of memory capacity being an amount of unused memory capacity in the client that is free to accept data received by the client;

notifying a filtering condition from the client to said proxy server in accordance with the monitoring result; and

filtering the object by said proxy server in accordance with the filtering condition thus notified.” (Emphasis Added).

An object filtering method including the above-quoted features has the advantage that a residual amount of memory capacity of a client is monitored and a filtering condition is notified from the client to a proxy server in accordance with the monitoring result. The residual amount of memory capacity is an amount of unused memory capacity in the client that is free to accept data received by the client. Such a method addresses the problem in the

prior art where an object is transmitted to a client irrespective of a variation of a residual amount of memory capacity of the client.

In the prior art, if the residual amount of the memory capacity is reduced, an object may not be able to be stored, and either the object will have to be discarded or some existing objects will have to be discarded in order to make room for the object. If the object is discarded without being stored, then the communication resources used to send the object are wasted. Thus, an object filtering method including the above-quoted features helps to enhance the line using efficiency between a proxy server and a client and to avoid careless data deletion. (Specification; page 2, line 22 to page 3, line 7; page 3, lines 9-12; page 10, lines 11-18; page 12, lines 10-22).

Huang neither discloses nor suggests an object filtering method including the above-quoted features where a residual amount of memory capacity of a client is monitored and a filtering condition is notified from the client to a proxy server in accordance with the monitoring result.

In the "Response to Arguments" section of the present Office Action, the Examiner responded to applicant's arguments that were made in the reply filed on February 14, 2005, by stating that:

"Applicant argues in substance that Huang neither discloses nor suggests an object filtering method including the where a client monitors a residual amount of memory capacity and notifies a filtering condition to a proxy server in accordance with monitoring result. Furthermore, Huang's receiver hit information (RHI) contains information about device capabilities of a client device. The Applicant also states that the term "device capabilities" in Huang refers to static information about a client device that does not change over time and not to dynamic information such as a residual amount of memory capacity of the client device." (Emphasis Added).

The remarks made by applicant in the reply filed on February 14, 2005, are incorporated by reference herein. The Examiner was correct in asserting that applicant stated that the term "device capabilities" in Huang refers to static information about a client device that does not change over time and not to dynamic information such as a residual amount of memory capacity of the client device. Indeed, the "device capabilities" mentioned by Huang

that are included in a RHI by a client device are “type of display” and “size of graphics memory”. The “size of graphics memory” is static information as it refers to the total memory capacity of the graphics memory, and Huang neither discloses nor suggests monitoring a residual amount of graphics memory, because Huang is only concerned with the total size of graphics memory, which remains constant. (Huang; column 5, lines 42-65).

However, the Examiner also stated in the “Response to Arguments” section of the present Office Action that:

“In response to applicant’s argument that the references fail to show certain features of applicant’s invention, it is noted that the features upon which applicant relies (i.e., the residual amount of memory to be dynamic nor that the monitored residual amount of memory capacity is changed over time) are not recited in the rejected claim(s).” (Emphasis Added).

Applicant has amended claim 1 to clarify that the residual amount of memory capacity is an amount of unused memory capacity in the client that is free to accept data received by the client. Thus, the monitoring result can change over time as the amount of unused memory capacity in the client changes when objects are stored or deleted by the client. As a consequence, the monitored “residual amount of memory capacity” is a dynamic value that changes with the memory usage of the client.

In the “Response to Arguments” section of the present Office Action, the Examiner further states that:

“Furthermore, the Examiner would like to draw the Applicant’s attention to the cited sections of Huang states that the RHI can be included with an object request by the requesting client device. This would leave one to believe that at each separate time the client requests information, the request has with it the RHI of that specific time. It is also reminded that the RHI of the system can include size of graphics memory of the device, all of which reads on the Applicant’s broad claim language.” (Emphasis Added).

Huang does teach that the RHI can be included with an object request by the requesting client device. (Huang; column 5, lines 49-50). However, Huang does not monitor a residual amount of memory capacity of the client device, and does not change the RHI based on a monitoring result of a residual amount of memory capacity. Instead, the client

device of Huang continues to send the same constant value for the size of the graphics memory with each object request. Huang recognizes that instead of redundantly sending the same values for device capabilities with each object request, a local proxy server can store the device capabilities of a client device in a table, where the table entry for a particular client device can be stored when the device first registers with an Internet Service Provider (ISP). (Huang; column 5, lines 55-61). Thereafter, in the system of Huang, the local proxy server can receive an identifier of the client device when the client device makes a request, access the table based on the identifier, and construct the appropriate RHI. (Huang; column 5, lines 60-65). Thus, Huang neither discloses nor suggests monitoring a residual amount of memory capacity of a client device, and Huang neither discloses nor suggests notifying a filtering condition from the client device to a proxy server in accordance with the monitoring result.

Finally, in the "Response to Arguments" section of the present Office Action, the Examiner states that:

"Furthermore, if the Applicant were to look at the Abstract and column 3, lines 16-37, one would see that the prior art of Huang teaches dynamic load conditions." (Emphasis Added)

However, it is important to realize that: (i) the dynamic load conditions in Huang refer to dynamic load conditions of proxies and to dynamic traffic conditions of a data network, and not to dynamic memory conditions of a client device; and (ii) the dynamic load conditions of the proxies and dynamic traffic conditions of the data network in the system of Huang are used to adaptively distribute rendering tasks among proxies, and not to change a filtering condition for an object sent to a client device. (Huang; Abstract; column 3, lines 16-37).

The system of Huang simply allows for distributed computing between proxies based on load conditions of the proxies by adaptively distributing rendering tasks among proxies. (Huang; column 3, lines 16-37). In the system of Huang, a participating proxy can choose to (a) perform the complete object rendering by itself, (b) perform a partial rendering if the rendering process can be staged, or (c) do nothing and let another proxy perform the rendering task. (Huang; column 3, lines 38-49). It is important to note that the ultimate filtering

condition for the client device in the system of Huang is not changed based on the dynamic load conditions of the proxies, but that the dynamic load conditions of the proxies in the system of Huang only affect which proxies perform the rendering tasks. (Huang; column 3, lines 16-49).

For example, in the system of Huang, the device capability of a client device, such as a personal digital device (PDD) can be specified as a pair of color encoding and image size, d(c 1 s 2), indicating that the PDD can only display (d) an image size (s) of up to 2M bytes with a 1-bit color encoding (c). (Huang; column 10, lines 35-39). Then, a proxy server that receives an image object having a label of r(c 16 s 1000) in response to a request from the PDD having the RHI d(c 1 s 2) will be informed that the PDD is incapable of displaying the object as received, and that the image object will need to be rendered into a form that the PDD is capable of displaying. (Huang; column 10, lines 46-52). Based on load considerations of the proxy server, the proxy server in the system of Huang may elect to only modify the color encoding of the received object from 16 level to 1 so that the label received by a next proxy server in the system of Huang will be r(c 1 s 1000), which is a form still not compatible with the PDD's RHI of d(c 1 s 2). (Huang; column 10, lines 52-67). The next proxy server in the system of Huang may then elect to render the received image object to reduce the image size from 1000 megabytes to 2 megabytes, resulting in the modified label of r(c 1 s 2), which is a form that is compatible with the PDD's RHI of d(c 1 s 2). (Huang; column 10, line 67 to column 11, line 5).

Notice that, in the example provided by Huang, the RHI of the PDD is not changed based on the dynamic load conditions of the proxies, but remains constant at d(c 1 s 2). Thus, the proxies must render the image object to a format compatible with the PDD's device capabilities specified by d(c 1 s 2). The dynamic load conditions of the proxies in the system of Huang only affect which proxies perform the rendering operations. In the example provided by Huang, one proxy performs rendering to modify the color encoding of the image object while a next proxy performs rendering to reduce the image size. The requirements of the final image object that is sent to the PDD in the example provided by Huang do not change based on the dynamic load conditions of the proxies, because the image object has to

be rendered to have the final label r(c 1 s 2) before it is compatible with the device capabilities of the PDD. Thus, Huang neither discloses nor suggests monitoring a residual amount of memory capacity in a client device, and Huang neither discloses nor suggests notifying a filtering condition from the client to the proxy server in accordance with the monitoring result.

Therefore, independent claim 1, as amended, is neither disclosed nor suggested by the cited prior art and, hence, is believed to be allowable.

Independent claim 12, as amended, recites a client device with features similar to features of an object filtering method of independent claim 1. Therefore, independent claim 12 is believed to be allowable for at least the same reasons that independent claim 1 is believed to be allowable.

Independent claim 19, as amended, recites a client device for accessing a server through a proxy server to request a desired object from the server, the client device comprising:

“a controller for controlling an access to said proxy server to acquire the object; and

a memory unit for storing the object;

wherein said controller is configured to monitor a residual amount of memory capacity of said memory unit, said residual amount of memory capacity being an amount of unused memory capacity of the memory unit that is free to accept data received by the client device; and

wherein when said controller detects that said residual amount of memory capacity of said memory unit is equal to a predetermined residual amount or less, said controller notifies to said proxy server a filtering condition for filtering the object.” (Emphasis Added).

Neither Huang nor Ferguson, alone or in combination, disclose or suggest a client device including the above-quoted features. A client device including the above-quoted features has features similar to an object filtering method of independent claim 1 and, thus, is believed to be distinguished from the system of Huang for at least the same reasons indicated

above with respect to claim 1. Furthermore, the teaching of Ferguson does not cure the deficiency with respect to the teaching of Huang.

The Examiner states that, "Ferguson teaches detecting that a residual amount of memory of said memory unit is equal to a predetermined residual amount or less said controller notifies to said proxy server a filtering condition for filtering the object, (e.g. col. 10, line 61 – col. 11, line 50)." (Emphasis Added).

However, the system of Ferguson is concerned with downloading webpages in the background during idle times and not with notifying filtering conditions to a proxy server for filtering objects. (Ferguson; abstract). In the system of Ferguson, a user sets the capacity of a local cache through an options menu. (Ferguson; column 7, lines 19-26). Then, when the system of Ferguson is downloading data in the background, the cache manager 410 determines the feasibility of a new download, i.e., whether the current cache consumption is within the threshold of the total cache capacity. (Ferguson; column 11, lines 11-18). If a "Cache Full" condition is detected, the invention of Ferguson prompts a user with options for enabling the current download. (Ferguson; column 11, lines 16-18). The options that are presented to the user include: (1) cancel all flags in Q-Links list, which invokes an auto-deletion mechanism to generate cache space; (2) go through Q-links and cancel selected flags; (3) increase the storage limit; and (4) ignore the message. (Ferguson; column 11, lines 19-50). Thus, none of the options presented to the user in the system of Ferguson allow for notifying to a proxy server a filtering condition for filtering an object.

Therefore, independent claim 19, as amended, is neither disclosed nor suggested by the cited prior art and, hence, is believed to be allowable. The Patent Office has not made out a *prima facie* case of obviousness under 35 U.S.C. 103.

The dependent claims are deemed allowable for at least the same reasons indicated above with regard to the independent claims from which they depend.

Conclusion:

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date September 14, 2005

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